WHAT IS CLAIMED IS:

1. In a sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, a target positioned in the sputtering cavity and adapted to deposit a sputtered material having a first thermal expansion rate, and a power supply operatively connected to the target to apply an electric charge to at least a portion of the target, the improvement comprising a removable liner positioned adjacent a selected interior surface of the chamber, the liner being adapted to receive an overcoat of the sputtered material that otherwise would be deposited on said selected interior surface of the chamber, the liner being adapted to expand and contract with the overcoat at said first thermal expansion rate without substantial spalling of particles of the overcoat from the liner.

2. The sputtering chamber of claim 1 wherein the liner is a flexible, soft liner.

3. The sputtering chamber of claim 1 wherein the liner comprises a mat of fibrous material.

4. The sputtering chamber of claim 1 wherein the liner comprises a non-woven web of fibers.

5. The sputtering chamber of claim 4 wherein the fibers are disposed in a substantially randomly intertangled manner.

6. The sputtering chamber of claim 5 wherein the randomly intertangled fibers define a plurality of interstitial spaces.

7. The sputtering chamber of claim 1 wherein the liner comprises a fabric of interwoven fibers.

8. The sputtering chamber of claim 1 wherein the liner comprises a plurality of ceramic fibers.

9. The sputtering chamber of claim 8 wherein the liner comprises a plurality of refractory ceramic fibers.

10. The sputtering chamber of claim 1 wherein the liner comprises a plurality of metal alloy fibers.

11. The sputtering chamber of claim 10 wherein the liner comprises a plurality of stainless steel fibers.

12. The sputtering chamber of claim 1 wherein the liner comprises a mineral wool selected from the group consisting of rock wool, slag wool, and fiberglass.

13. The sputtering chamber of claim 1 wherein said selected interior surface is located directly above a path of substrate travel.

14. The sputtering chamber of claim 13 wherein said selected interior surface is defined by a ceiling of the chamber.

15. The sputtering chamber of claim 14 wherein said selected interior surface comprises a central surface region defined by the chamber's ceiling, wherein two rotary targets are mounted below the chamber's ceiling, the targets being spaced apart such that adjacent the central surface region the liner is exposed to material sputtered in the chamber.

16. The sputtering chamber of claim 13 wherein said selected interior surface is a sidewall of the chamber.

17. A sputtering chamber for applying thin films onto substrates, comprising:

a) a sputtering cavity in which a controlled environment can

be established;

b) a target positioned in the sputtering cavity and adapted to deposit a sputtered coating having a first thermal expansion rate;

c) a power supply operatively connected to the target for applying an electric charge to at least a portion of the target; and

d) a removable liner positioned adjacent a selected interior surface of the chamber, the liner being adapted to receive an overcoat of the sputtered coating that otherwise would be deposited on said selected interior surface of the chamber, the liner being adapted to expand and contract with the overcoat at said first thermal expansion rate without substantial spalling of particles of the overcoat from the liner.

18. The sputtering chamber of claim 17 wherein said selected interior surface is defined by a ceiling of the chamber, said selected interior surface comprising a central surface region defined by the chamber's ceiling, wherein two rotary targets are mounted below the chamber's ceiling, the targets being spaced apart such that adjacent the central surface region the liner is exposed to material sputtered in the chamber.

19. The sputtering chamber of claim 17 wherein the target comprises a sputterable ceramic material and/or the chamber contains a reactive gaseous atmosphere, and wherein the liner comprises a plurality of ceramic fibers.

20. The sputtering chamber of claim 17 wherein the liner is mounted adjacent said selected interior surface by at least one aluminum fastener having a

roughened surface exposed to material sputtered in the chamber.

21. The sputtering chamber of claim 20 wherein the roughened surface has an average surface roughness R_a of at least about 1.3 microns.

22. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, the chamber including a target positioned in the cavity, the target being operatively connected to a power supply adapted to apply an electric charge to at least a portion of the target, the chamber including a removable liner positioned adjacent a selected interior surface of the chamber, the liner comprising a mat of fibrous material.

23. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, the chamber including a target positioned in the cavity, the target being operatively connected to a power supply adapted to apply an electric charge to at least a portion of the target, the chamber including a removable liner positioned adjacent a selected interior surface of the chamber, the liner comprising a non-woven web of fibers.

24. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which there is established a controlled environment comprising a sputtering gas, the chamber including a target positioned in the cavity, the target comprising a sputterable target material selected in conjunction with said sputtering gas to facilitate deposition of a dielectric film, the chamber including a power supply operatively connected to the target to apply an electric

charge to at least a portion of the target, wherein a removable liner positioned adjacent a selected interior surface of the chamber is adapted to catch an overcoat of the dielectric film, which overcoat otherwise would be deposited on said selected interior surface of the chamber, the liner comprising a plurality of ceramic fibers.

25. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, the chamber including a target positioned in the cavity, the target being operatively connected to a power supply adapted to apply an electric charge to at least a portion of the target, the chamber including a removable liner positioned adjacent a selected interior surface of the chamber, the liner comprising a plurality of metal alloy fibers.

26. The sputtering chamber of claim 25 wherein the liner comprises a plurality of stainless steel fibers.

27. A method of applying thin films onto substrates, the method comprising:

a) providing a sputtering chamber having a sputtering cavity in which there is established a controlled environment comprising a sputtering gas, the chamber including a target positioned in the cavity, the target being adapted to deposit a sputtered material, the chamber including a power supply operatively connected to the target to apply an electric charge to at least a portion of the target, the chamber including at least one substrate support carrying a substrate within the sputtering cavity, the chamber including a

removable liner positioned adjacent a selected interior surface of the chamber, the liner comprising a mat of fibrous material; and

b) sputtering the target to deposit a film of the sputtered material upon the substrate, thereby depositing an overcoat of the sputtered material on the liner.

28. The method of claim 27 wherein the liner comprises a plurality of ceramic fibers and the target comprises a sputterable material selected in conjunction with the sputtering gas to deposit said film as a dielectric film, the method comprising delivering the sputtering gas to the sputtering cavity.

29. The method of claim 28 wherein the target comprises a sputterable ceramic material and/or the sputtering gas delivered to the sputtering cavity is a reactive gas.

30. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, the chamber including a target positioned in the cavity, the target being operatively connected to a power supply adapted to apply an electric charge to at least a portion of the target, the chamber including a removable liner positioned adjacent a selected interior surface of the chamber, the liner comprising a plurality of fibers.

31. The sputtering chamber of claim 30 wherein the liner comprises a plurality of fibers each having a diameter of less than about 300 micrometers.

32. The sputtering chamber of claim 31 wherein the diameter is less than about 50 micrometers.

33. The sputtering chamber of claim 32 wherein the diameter is less than about 30 micrometers.

34. The sputtering chamber of claim 30 wherein the liner is mounted adjacent said selected interior surface using a plurality of fasteners.

35. The sputtering chamber of claim 34 wherein the fasteners include at least one elongated fastening bar, the liner being sandwiched between the fastening bar and said selected interior surface of the chamber.

36. The sputtering chamber of claim 34 wherein the fasteners comprise aluminum.

37. The sputtering chamber of claim 34 wherein the fasteners are formed of a material having a thermal expansion coefficient that is substantially the same as that of the liner.

38. The sputtering chamber of claim 34 wherein the fasteners each have a roughened surface exposed to material sputtered in the chamber.

39. A sputtering chamber for applying thin films onto substrates, the chamber having a sputtering cavity in which a controlled environment can be established, the chamber including two rotary targets mounted in the cavity below a ceiling of the chamber, the targets being operatively connected to at least one power supply adapted to apply an electric charge to at least a portion of each target, the chamber including a removable liner positioned adjacent a selected interior surface of the chamber, said selected interior surface comprising a central surface region defined by the chamber's ceiling, the liner comprising a mat of fibrous material, wherein the two targets are spaced apart such that adjacent the

central surface region the liner is exposed to material sputtered in the chamber, wherein the liner is mounted adjacent said selected interior surface by a plurality of aluminum fasteners each having a roughened surface exposed to material sputtered in the chamber.

40. The sputtering chamber of claim 39 wherein the roughened surface has an average surface roughness R_a of at least about 1 micron.

41. The sputtering chamber of claim 40 wherein the average surface roughness R_a is at least about 1.75 microns.

42. The sputtering chamber of claim 41 wherein the average surface roughness R_a is at least about 2 microns.

43. The sputtering chamber of claim 39 wherein the aluminum fasteners include at least one elongated aluminum fastening bar, the liner being sandwiched between the aluminum fastening bar and said selected interior surface of the chamber, the aluminum fastening bar having a roughened major surface exposed to material sputtered in the chamber.